Chapter 4

Defensive Operations

Defensive operations retain ground, gain time, deny the enemy access to an area, and damage or defeat attacking forces. Smoke and obscurant use multiplies the commander's ability to disrupt enemy attacks, seize the initiative, and project combat power at the critical time and place to defeat the enemy. Smoke and obscurant use will support any type of defensive operation. Used correctly it will overcome any initial advantage of the attacker.

Historical Perspective

During World War II, large-area smoke denied the Germans observation for directing accurate, indirect fire onto the US Fifth Army at Anzio. The 24th Decontamination Company landed at Anzio on D day, equipped with Ml smoke generators, M4 smoke pots, and eight Navy Besler generators.

On its first night ashore the unit smoked the beaches and anchorage. Within two days they had set up a smoke line nearly 2 miles long. As the beachhead forces expanded, other smoke troops, including a British unit and the US 179th Smoke Generator Company, moved to Anzio to increase the size of the cloud. Initially, smoke at Anzio was intended to be part of the antiaircraft screen. This included making smoke at night, when flares dropped by lead planes appeared to be extinguished as they dropped into the smoke.

The Fifth Army's VI Corps began an end run that bogged down. The Germans contained the beachhead from its establishment on 22 January 1944 until the Allied breakout the following May. Experience showed that a favorite enemy tactic was low-level bombing attacks at dawn and dusk. Consequently, it soon became standard practice to smoke the port at dawn and dusk and during red alerts for antiaircraft defense. The Luftwaffe made at least one raid each night until mid-February, when the artillery fire increased. The Allies used 8-inch howitzers to demolish farmhouses suspected of harboring German observers. They fired smoke from chemical mortars and small-caliber artillery onto nearby ridges and towers.

Yet, enemy observers had an unrestricted view of the entire harbor from the mountains in the background for pinpoint firing with long-range guns. Although the entire beachhead was within range of enemy guns, the Allies failed to obscure the beachhead itself in January and February. The air defense, artillery, and naval commanders were afraid that smoke on the beachhead itself would interfere with observation for friendly fire and with unloading the ships at anchorage. From 22 January to 10 February alone, the Allies took average daily losses of almost 28 tons of ammunition from enemy long-range fire and bombing.

To reduce these losses, the corps chemical staff and chemical unit commanders, with the approval of the VI Corps commander, MG Lucian K. Truscott, developed a new technique for use of the mechanical smoke generators. The technique resulted in the production of a light haze between the harbor and the front lines. The haze was thin enough to permit normal operations within it and thick enough to prevent German observation from the encircling hills.

On 18 March 1944, the 179th Smoke Generator Company moved from the harbor to forward positions. The smoke line formed a 15-mile arc around the port (Figure 8, on the next page), with 22 possible positions on land. Based on wind direction, 19 of those 22 positions had smoke generators. Also, two generators were mounted on Navy patrol craft in the harbor. The smoke generator positions were at 1,000-meter intervals just beyond the antiaircraft positions of the port and just short of the field artillery observation posts. The latter prevented enemy observation from the flanks of the concave harbor. The smoke sections began operations ½ hour before dawn and made smoke until 14 hour after sunset every day from 18 March until after the breakout in May 1944. During this period, the Allied troops at Anzio were able to unload an average of 3,500 tons of supplies daily.

The National Training Center (NTC) is an area where smoke employment is possible on a large force-on-force scale. Key insights from the NTC for the defense include the following

- Smoke compresses the battlefield with engagements fought at shorter range.
- We must use alternate weapon positions in smoke.
- Smoke employment requires more detailed planning.
- Smoke can be used in deception, at night, and for obstacle reduction.
- Units that do not train in smoke do not perform well.

Uses

Smoke and obscurants integrated throughout the defensive framework provide major disruptions to enemy synchronization providing windows of opportunity for our forces to seize the initiative and set the terms of combat. In the defense—

- Use smoke to support maneuver by–
  - Concealing disengaging and moving forces.
  - Slowing and disrupting enemy movement.
  - Isolating attacking echelons.
  - Concealing engineer operations and defensive preparations.

In addition, use the guidance in Chapter 3 for additional ways to support maneuver.

- Use smoke to provide additional firepower by disrupting enemy command and control and forcing the enemy to mass, thus providing a lucrative target. Other ways are identical to those in offensive operations. See Chapter 3.
- Use smoke to protect the force in the same way as in offensive operations. See Chapter 3.

In addition to the general techniques listed in Chapters 1 and 3, techniques to minimize interference in the defense include the following

- **Verify enemy locations** (responsibility of reconnaissance).
  - The enemy can use both our smoke and theirs to conceal move-

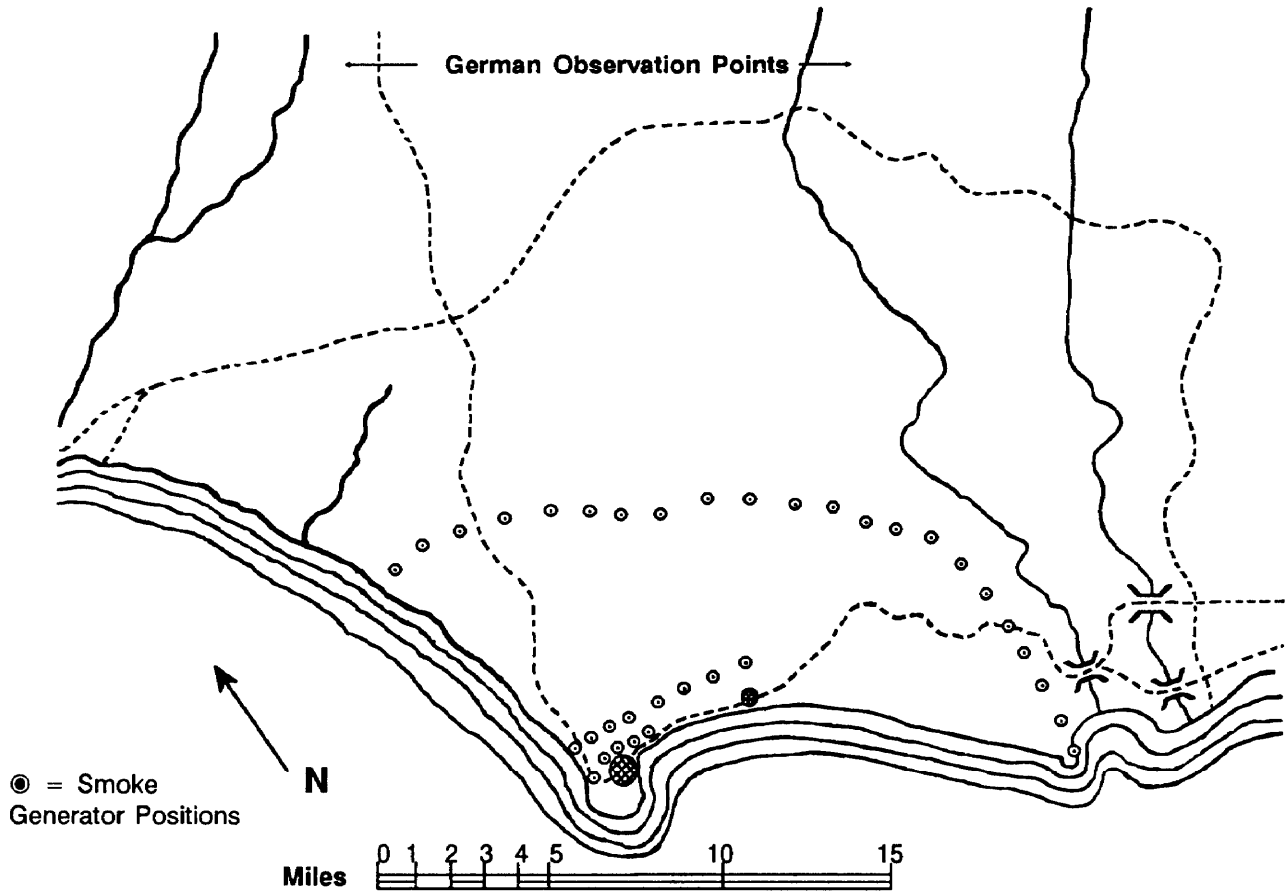

Figure 8. Smoke unit positions at Anzio Beachhead after 18 March 1944.

ment to alternate positions or to break contact.
– Aggressive reconnaissance before and during the engagement will allow you to shoot and remain in contact.
– You can use aviation assets to spot and mark enemy targets for destruction by indirect and direct fire.

● **Plan and use all sensor and viewer capabilities.** Consider placing ground surveillance radar, air defense weapons, and target acquisition radars on the flanks or high ground to acquire targets through the smoke. Maintain communications between these systems and both direct and indirect fire elements. Use the acquisition element to observe and adjust direct and indirect fire at targets.

● **Plan for enemy countermeasures.** Enemy forces will counter your smoke. The enemy may use countersmoke to confuse our command and control, so avoid reliance on visual signals. The enemy will increase use of indirect fire weapons when direct fire target acquisition is ineffective. Therefore, plan artillery counterbattery and countersmoke fire when you stop or delay the enemy.

Goal

As in offensive operations, the main focus of smoke in the defense is to defeat enemy target acquisition and reconnaissance, and to conceal maneuver and support forces. Our intent is to deny the enemy information about the disposition and composition of our forces. That allows us to gain time, concentrate forces elsewhere, control key or decisive terrain, and wear down enemy forces as a prelude to offensive operations.

Our overall goal is to improve the commander's ability to retain his initiative in operations against a potentially numerically superior force. Appendix A contains tactical decision aids for determining which smoke delivery means to use against the specific smoke targets covered by the tactics for using smoke in defensive operations.

Elements of Defense

The five complementary elements of the defense are deep operations forward of the FLOT, security force operations forward and to the flanks of the defending force, defensive operations in the main battle area (MBA), reserve operations in support of the main defensive effort, and rear operations.

Deep Operations

In the defense, deep operations are aimed at preventing the enemy from concentrating overwhelming combat power by disrupting their momentum and destroying the coherence of their attack. In deep operations, use smoke to —
- Force the enemy to deploy into our strength.
- Defeat or disrupt command and control efforts.
- Isolate reinforcing echelons from the assault force.

Smoke employment tactics in deep operations are identical to those in offensve operations (preparation phase). See Chapter 3.

Security Force Operations

The fundamental purposes of security force operations are to defeat and destroy enemy reconnaissance forces, force the enemy to deploy, confirm the direction and strength of the enemy attack toward the main body, and buy time for the main body to deploy forward and laterally. Use smoke in security force operations to—
- Conceal movement of maneuver and support forces, allowing the commander to mass forces unobserved.
- Provide tactical surprise, allowing the commander to seize the initiative and set the terms of combat.
- Defeat enemy reconnaissance and counterreconnaissance efforts.
- Conceal obstacle emplacement.

The first part of the defensive battle that the friendly commander must win is counterreconnaissance. Counterreconnaissance is an integral part of the security mission. The focus of the Threat's reconnaissance is to confirm or deny the dispositions and intentions of our force. Use smoke as an active counterreconnaissance measure to—
- Fix the enemy reconnaissance force.
- Mark the enemy reconnaissance force for destruction with direct and indirect fire weapons.
- Deny the enemy reconnaissance force information about the disposition, composition, or intent of friendly forces.

Smoke employment tactics in counterreconnaissance are the following:
- Screening smoke. Use screening smoke to conceal maneuver and obstacle emplacement. Use smoke in the security force area and along the flanks to conceal movement. Use smoke forward of the battle hand over line to allow the security force to disengage. You must carefully control the smoke to prevent silhouetting your units.
- Protecting smoke. Use protecting smoke to defeat enemy antitank and air defense systems.
- Obscuring smoke. Use projected smoke mixed with high-explosive rounds before the enemy can pinpoint your units. Plan obscuring fire based on decision points for the enemy to isolate and confuse their

reconnaissance forces. Plan obscuring fire during the battle hand over to allow the security force to disengage and pass through friendly lines unobserved.

- Marking smoke. Use marking smoke to mark enemy targets for rapid destruction or to reduce the potential for firing on friendly forces. Aviation reconnaissance assets are particularly useful to spot the reconnaissance force and mark it with helicopter-delivered smoke rockets.
- Smoke for deception. Uses are identical to those in offensive operations (preparation phase). See Chapter 3. Figure 9, below, shows smoke employment in security operations.

Main Battle Area

The decisive battle usually takes place in the MBA. The defender concentrates the strongest possible forces for decisive action against the enemy main effort. Use smoke to –

- Defeat enemy target acquisition efforts without degrading our own ability to acquire and engage.
- Create opportunities for commanders to seize the initiative locally and attack.
- Slow the advance of the attacking force.
- Separate and isolate the attacking echelons.
- Force enemy infantry to dismount.
- Disrupt the enemy's ability to exercise command and control.
- Once the enemy is in the engagement area of our choosing, prevent them from breaking contact so we can destroy them immediately.

Smoke employment tactics in the MBA are the following:

- Obscuring smoke. Use obscuring smoke to isolate the engagement area and counterattack or spoiling attack objectives, defeat enemy target acquisition and guidance systems, and defeat reconnaissance and counterreconnaissance efforts. Use projected smoke means to deliver smoke mixed with high-explosive rounds in front of the objective; between enemy formations; and on identified forward observer, ATGM, and tank unit positions before the enemy can pinpoint your units as targets. Using projected

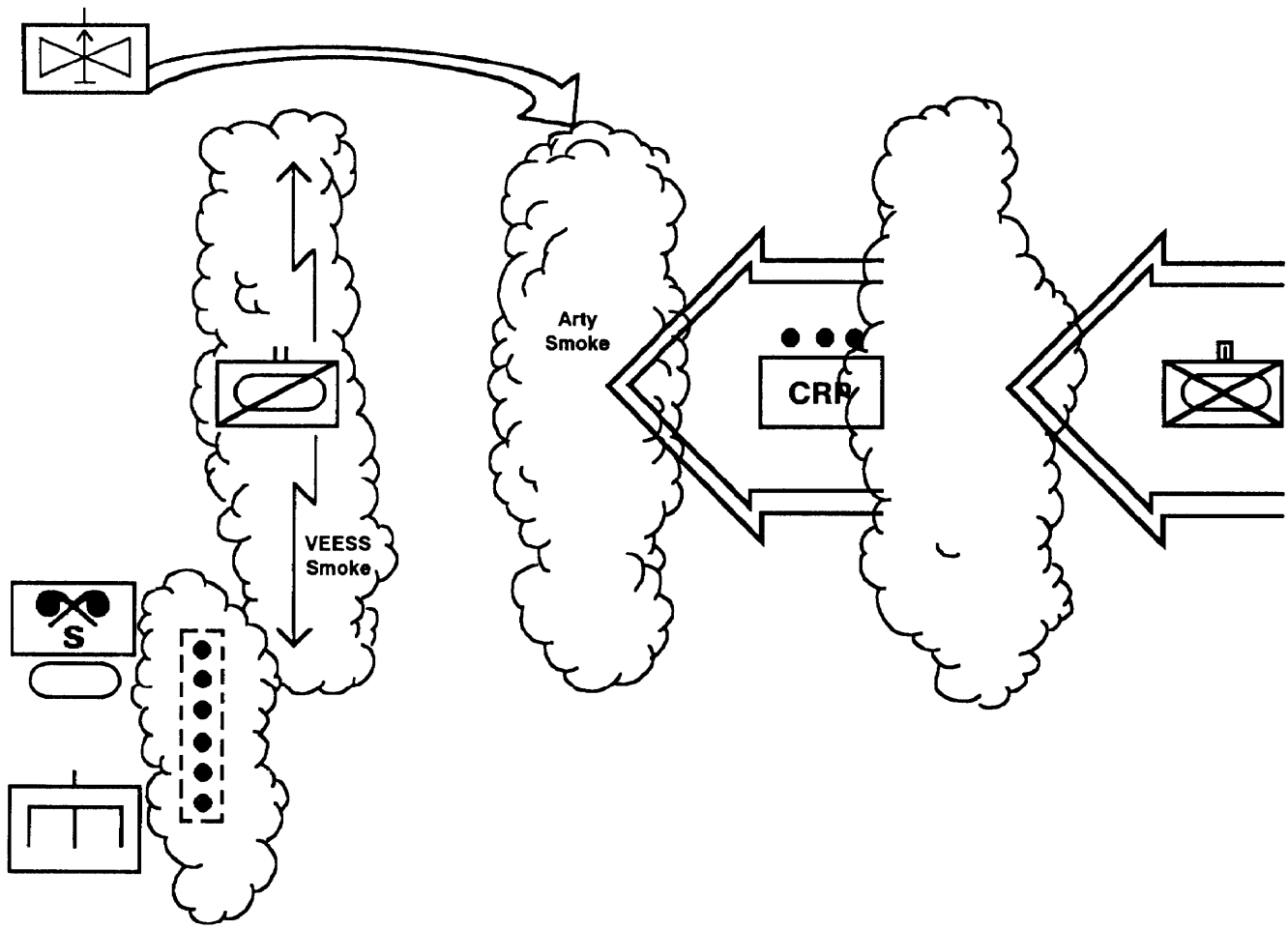

Figure 9. Example of smoke use in security force operations, with helicopter and artillery smoke marking and obscuring enemy formations; thus, isolating them from each other and denying their RSTA efforts. The cavalry squadron uses its VEESSs to conceal the location of the main battle positions from direct observation. Mechanized smoke assets conceal engineer obstacle emplacement, protecting that critical asset from interdiction.

smoke as countersmoke and to isolate the objective can significantly interfere with the enemy commander's synchronization.

- Screening smoke. Use screening smoke to conceal maneuver as you move to new positions; conceal the force as you bypass, breach, or cross obstacles or small pockets of resistance in counterattack or spoiling attack; along the flanks to protect the force; and in the rear to conceal disposition and composition of reserves. Use self-defense and generated-smoke means to deliver smoke across danger areas and to the flanks of the force to limit enemy observation and engagement.
- Identifying smoke. Use the same technique as in the security force operations.
- Protecting smoke. If the enemy has known or suspected directed-energy weapon capability, concealing your force in a blanket of oil smoke will attenuate some of the energy.
- Smoke for deception. Use this smoke to draw attention away from the main defensive effort and the counterattack or spoiling attack to areas of little or no importance. Use generated-smoke to create small- to large-area smoke away from the main body.

Reserve Operations

The primary purpose of the reserves in the defense is to counterattack, to exploit enemy weaknesses, and to reinforce forward defensive operations. Use smoke in reserve operations to—

- Deny the enemy information about the location and strength of reserve forces.
- Conceal movement of reserve forces, allowing the commander to mass forces unobserved.
- Provide tactical surprise, allowing the commander to seize the initiative and set the terms of combat.

The employment tactics for smoke support in reserve operations depend on how, when, and where the commander chooses to use his reserves. In general, the tactics for smoke employment for reserves in a counterattack or spoiling attack role are the same as smoke tactics for the preparation phase of offensive operations. For reserve forces in a reinforcing role, the smoke tactics are the same as those for security force operations in the defense.

Rear Operations

We conduct rear operations to allow the commander freedom of maneuver and for continuity of operations, to include continuity of sustainment functions and command and control. Use smoke in rear operations to—

- Conceal support forces, facilities, and activities. Reducing enemy observation reduces the necessity to move frequently. When necessary, conceal movement of support forces.
- Deny the enemy use of landing zones and/or drop zones.
- Isolate enemy forces in the rear area.
- Defeat rear area Threat acquisition efforts and support base, base cluster, and rear operations response to the Threat.

Smoke tactics in rear operations are also dependent upon the commander's intent and the threat. In general, use smoke to attack enemy target acquisition and engagement efforts when identified. The smoke employment tactics are similar to those for a hasty attack. Figure 10, on the next page, illustrates smoke use in rear area operations.

Example

The following example depicts a mechanized infantry heavy brigade conducting the movement to contact. The brigade is the 2d Brigade, 54th Infantry Division (M). Smoke delivery means include the direct support artillery battalion, battalion mortars, smoke generator platoon, VEESS, smoke pots, smoke grenades, and aviation assets on-call. 2d Brigade will defend in sector, commencing at H-hour. The commander's intent is to force the enemy to deploy prematurely, seize the initiative, and conduct local counterattacks to destroy the enemy force.

Intelligence indicates the enemy is the 1st Guard Motorized Rifle Division, 2d Combined Arms Army, which relieved another motorized rifle division and is conducting a meeting engagement from the march. The enemy is marching by regiments, with three rrgiments in front and a combined arms reserve instead of a second echelon. Terrain is fairly open to the west of Hill 268 but is restricted to the east of Hill 352. The enemy has excellent observation and fields of fire from both hills.

At H – 48 hours, the commander issues the restated mission and his planning guidance. The brigade chemical officer, S2, and FSO go to the intelligence cell and begin target development.

The brigade chemical officer has completed his estimate at H – 42 hours and provides a draft target list to the FSO. While the brigade chemical officer briefs the commander, the brigade chemical NCO continues smoke target analysis in coordination with the smoke platoon leader.

At H -36 hours, the brigade chemical officer, FSO, and smoke platoon leader finalize the smoke support plan. This includes a draft smoke support annex to the brigade OPORD.

At H -33 hours, the brigade commander approves the final OPORD. The brigade commander and staff issue the order to the commanders and specialty unit leaders.

Three hours later, the smoke platoon makes smoke to conceal obstacle emplacement.

At H – 24 hours, the brigade chemical officer finalizes smoke support coordination with all units. This includes coordination with adjacent units that might be affected by smoke if the wind shifts.

At H – 20 hours, the brigade chemical NCO verjfies with the FScell that the additional smoke munitions for the artillery and mortars are on hand and prepositioned.

The brigade chemical officer receives a brief back from the smoke platoon leader and assistant S3 (operations) officer at H -18 hours. These officers verify rehearsals in the smoke platoon and maneuver units (for on-board smoke use). The FScell and chemical cell also check communications circuits at this time.

At H – 15 hours, aviation reconnaissance spots enemy divisional reconnaissance assets. Helicopter-delivered rockets mark this enemy element for destruction by CAS aircraft.

At H – 12 hours, the security force encounters enemy reconnaissance assets. Based on the commander's decision support template, the DS artillery battalion begins to fire a mixture of HE and smoke (HC) onto identified targets. Mortars moving with the security force also fire a mixture of HE and smoke (WP) between the security force and the reconnaissance assets. This will deny the enemy information and confuse them as to the location and disposition of our force.

Thirty minutes later, the security force engages the enemy reconnaissance with direct fire weapons. Artillery and mortar fire shift to behind the enemy reconnaissance force. This shifting of fire silhouettes the enemy, isolates the enemy, and prevents obscuration of our own direct fire

At H – 8 hours, the security force identifies elements of the enemy FSE moving into the brigade area of operations. Aviation and artillery assets mark targets with WP for attack by CAS aircraft.

The security force, at H – 6 hours, identifies elements of the enemy AG moving into the brigade area of operations. The smoke platoon stops smoke at the obstacle emplacement.

At H – 2 hours, the security force begins to withdraw. Security force mortars fire HE and WP mix to allow the security force to disengage. The smoke platoon makes smoke at the battle hand over line to conceal the rearward passage of lines.

At H-hour, aviation reconnaissance identifies elements of the division main body entering the brigade area of operations. The security force has done its job and forced the enemy to deploy along the western approach, avoiding the high ground on Hill 352. The artillery begins to fire on the flanks and forward elements of the enemy AG and main body. The mortars begin to fire on the flanks and forward elements of the enemy FSE. Both use a mixture of HE and WP. This will isolate the enemy forces and serve as good reference points for adjusting indirect and direct fire.

At H + 30 minutes, the enemy main body has entered the engagement area. Our indirect fire has caused attrition to their FSE and A G and forced the main body into our strength. The brigade commander now orders the artillery to fire FASCAM mixed with HC behind the engagement area to delay reinforcements and to isolate the main body for destruction.

At H + 1 hour, the direct fire fight has begun. Artillery fire switch to HE and HC mix. Mortars fire HE onto the enemy and WP onto the flanks. Our GSR teams pass target acquisition information to the TOW sections of each company. Our forces use thermal sights to acquire and engage the enemy, who cannot see through the smoke.

By H + 2 hours, the enemy commander is unable to maintain his momentum and begins to withdraw.

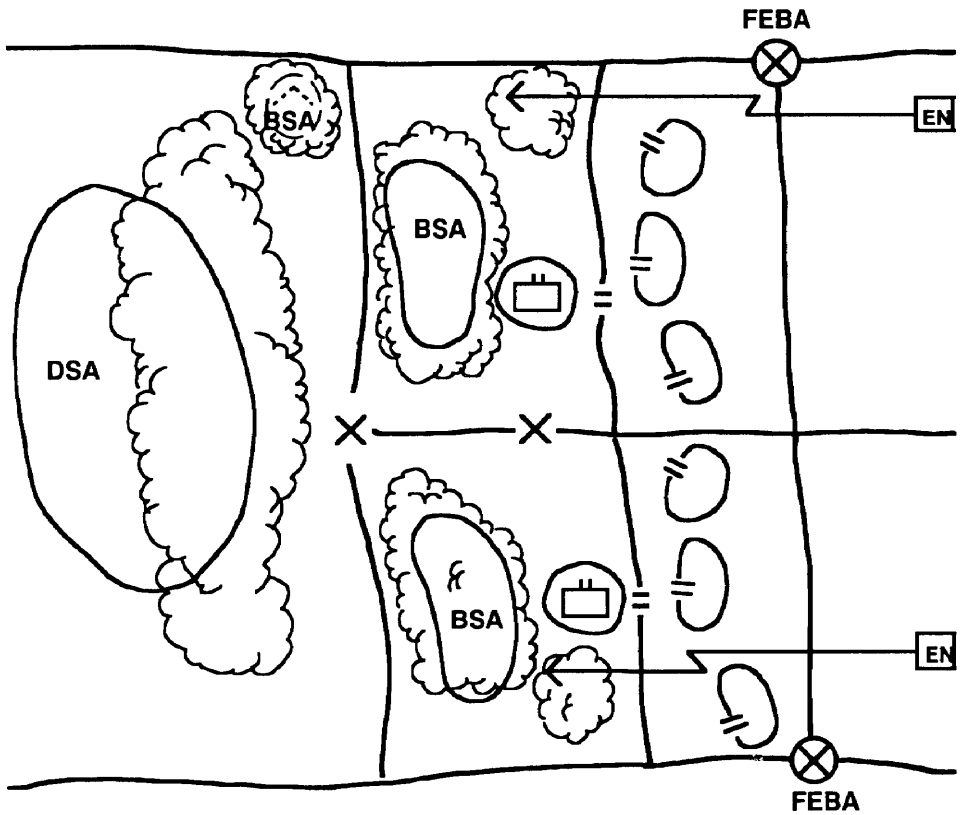

Figure 10. This example of smoke employment in rear operations uses large-area smoke clouds to conceal support activities from enemy RSTA efforts. A dummy BSA also has smoke support to complicate enemy intelligence gathering and to make our deception plan more believable. If enemy forces penetrate to our rear area, a mixture of HE and WP will delay their movement and mark them for destruction by responding forces.